

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
5 August 2004 (05.08.2004)

PCT

(10) International Publication Number
WO 2004/066272 A1

(51) International Patent Classification⁷:
H04N 1/32, G11B 20/00, G06T 1/00

G10L 19/00,

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:

PCT/IB2004/050009

(22) International Filing Date: 13 January 2004 (13.01.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

03100093.8

17 January 2003 (17.01.2003)

EP

(71) Applicant (for all designated States except US): KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): VAN DER VEEN, Minne [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). BRUEKERS, Alphons, A., M., L. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). VAN LEEST, Adriaan, J. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). CAVIN, Stéphane [CH/CH]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(74) Agent: SCHMITZ, Herman, J., R.; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

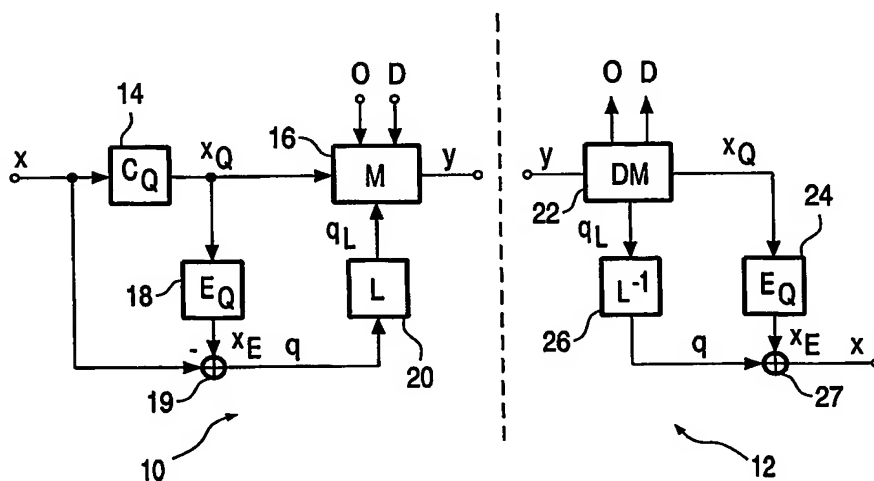
Published:

— with international search report

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: REVERSIBLE WATERMARKING OF DIGITAL SIGNALS



(57) Abstract: The invention relates to methods, devices, a system of devices and a signal where additional information is embedded in media content. The system includes a device (10) providing additional information (O, D) in a signal (y) having media content, comprising a first mapping unit (14) mapping the amplitude values of the media content onto first new values, and a multiplexing unit (16) inserting the additional information into the mapped media content. The system also includes a device (12) for receiving additional information (O, D) in a signal (y) having media content, comprising

a demultiplexing unit (22) arranged to receive a signal including media content (x_Q) the amplitude values of which have been mapped onto first new values together with additional embedded information (O, D), and remove the additional information from the mapped media content. The invention allows insertion of watermarks into media content such as audio.